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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,814	02/09/2001	Patrick Barrow	13DV13726	8662

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EXAMINER	
DAY, HERNG DER	

ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/780,814	BARROW ET AL.	
	Examiner	Art Unit	
	Herng-der Day	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Applicants' Amendment ("Amendment") to Office Action dated November 10, 2004, mailed February 10, 2005.

1-1. Claims 1, 6, 11, 12, 15, and 16 have been amended. Claims 1-18 are pending.

1-2. Claims 1-18 have been examined and rejected.

Drawings

2. The proposed drawing corrections to FIG. 7 and the replacement sheet of FIG. 7 received on February 10, 2005, are acceptable. The objection to the drawings has been withdrawn.

Specification

3. The objection to the specification has been withdrawn.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6-11 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for failing to recite elements that logically amount to the system set forth in preamble of claim 6.

5-1. Claim 6 sets forth a modeling system for "producing a two-dimensional electronic model of an aircraft engine harness". However, the body of the claim recites no elements that would logically amount to the modeling system for "producing a two-dimensional electronic model of an aircraft engine harness". Claims 7-11 are rejected as being dependent on the rejected claim 6.

Recommendations

6. Claim 18 recites the limitation "A modeling system in accordance with Claim 12" in line 1 of the claim. For clarification purposes, the Examiner suggests that "A modeling system" be replaced with "A system".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aldrich et al., U.S. Patent 5,138,698 issued August 11, 1992, in view of Hughes et al., U.S. Patent 5,506,950 issued April 9, 1996 (IDS AA filed August 8, 2003).

8-1. Regarding claim 1, Aldrich et al. disclose a method comprising the steps of:

generating two-dimensional electronically modeled aircraft engine harnesses from a three-dimensional harness definition that includes a plurality of connector fittings coupled together with a plurality of branches, wherein said three-dimensional harness definition defines a harness (A three dimensional view of the model is then selected and transferred to a two dimensional representation while retaining the aspect ratios of the cable assembly, column 3, lines 17-23), said generating the two-dimensional electronically modeled aircraft engine harnesses comprises:

defining each of the plurality of connector fittings (connector, column 16, lines 11-46);

determining design parameters of the harness (editing of the default values file, column 11, lines 6-15); and

generating a two-dimensional stick form model from the three-dimensional harness definition (transferred to a two dimensional representation, column 3, lines 17-23).

Aldrich et al. fail to expressly disclose creating by a processor, a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings and producing a second line that extends from said first line to a third one of said plurality of connector fittings. Nevertheless, Aldrich et al. disclose transferring a three dimensional view of the harness model to a two dimensional representation (column 3, lines 17-23) and suggest "The dimension 1622 appears three dimensional even though the isometric view in CADAM is two dimensional" (column 40, lines 38-40).

Hughes et al. disclose a method to convert a three dimensional computer representation of a wire harness into a two dimensional model of the harness (abstract). As shown in Fig. 3, an edited version of an unfolded harness, a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings and a second line that extends from said first line to a third one of said plurality of connector fittings.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Aldrich et al. to incorporate the teachings of Hughes et al. to obtain the invention as specified in claim 1 because, as suggested by Aldrich et al., Hughes et

al. expressly disclose unfolding a three dimensional view of harness into a two dimensional schematic with lines connecting the plurality of connector fittings.

8-2. Regarding claim 2, Aldrich et al. further disclose comprising the step of displaying the design parameters in a tabular output (for example, FIG. 20 is a wiring table).

8-3. Regarding claim 3, Aldrich et al. further disclose said step of determining design parameters further comprises the step of determining at least one of a branch angle, a base angle, and a true angle for the harness (for example, FIG. 19B displays determined angles of wires and connectors).

8-4. Regarding claim 4, Aldrich et al. further disclose said step of determining design parameters further comprises the step of determining at least one of a wire length, a fitting keyway, and a master keyway for the harness (Dimensioning techniques, column 40, lines 31-36; for example, FIG. 19B displays determined wire length between breakouts or between breakout and connector).

8-5. Regarding claim 5, Aldrich et al. further disclose said step of determining design parameters further comprises the steps of:

determining a length between harness branches (for example, FIG. 19B displays determined wire length between breakouts or between breakout and connector); and

determining locations of diametrical changes of the harness (determined breakout, FIG. 19B, diametrical change occurs when there is a breakout or branch).

8-6. Regarding claim 6, Aldrich et al. disclose a modeling system for producing a two-dimensional electronic model of an aircraft engine harness, said system configured to:

generate a two-dimensional electronic drawing from a three-dimensional harness definition that includes a plurality of connector fittings coupled together with a plurality of branches, wherein said three-dimensional harness definition defines a harness (A three dimensional view of the model is then selected and transferred to a two dimensional representation, column 3, lines 17-23);

Aldrich et al. fail to expressly disclose creating a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings and generating a second line that extends from said first line to a third one of said plurality of connector fittings to produce the two-dimensional electronic model. Nevertheless, Aldrich et al. disclose transferring a three dimensional view of the harness model to a two dimensional representation (column 3, lines 17-23) and suggest "The dimension 1622 appears three dimensional even though the isometric view in CADAM is two dimensional" (column 40, lines 38-40).

Hughes et al. disclose a method to convert a three dimensional computer representation of a wire harness into a two dimensional model of the harness (abstract). As shown in Fig. 3, an edited version of an unfolded harness, a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings and a second line that extends from said first line to a third one of said plurality of connector fittings.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Aldrich et al. to incorporate the teachings of Hughes et al. to obtain the invention as specified in claim 6 because, as suggested by Aldrich et al., Hughes et

al. expressly disclose unfolding a three dimensional view of harness into a two dimensional schematic with lines connecting the plurality of connector fittings.

8-7. Regarding claim 7, Aldrich et al. further disclose to generate the two-dimensional electronic model, said system further configured to determine at least one of a branch angle, a wire length, and a base angle of the harness (for example, FIG. 19B displays determined wire length between breakouts or between breakout and connector).

8-8. Regarding claim 8, Aldrich et al. further disclose to generate the two-dimensional electronic model, said system further configured to determine at least one of a harness true angle, a fitting keyway, and a master keyway of the harness (for example, FIG. 19B displays determined angles of wires and connectors).

8-9. Regarding claim 9, Aldrich et al. further disclose said system further configured to determine a length between adjacent harness branches (for example, FIG. 19B displays determined wire length between breakouts).

8-10. Regarding claim 10, Aldrich et al. further disclose said system further configured to determine diametrical changes of the harness branches (determined breakout, FIG. 19B, diametrical change occurs when there is a breakout or branch).

8-11. Regarding claim 11, Aldrich et al. further disclose said system further configured to define each connector fitting of the harness (connector, column 16, lines 11-46).

8-12. Regarding claim 12, Aldrich et al. disclose a system for generating a two-dimensional electronic model of an aircraft engine harness from a three-dimensional aircraft engine harness definition that includes a plurality of connector fittings coupled together with a plurality of branches, said system comprising a processor (using a computer, column 4, lines 49-53)

programmed to determine harness design parameters from the three-dimensional aircraft engine harness definition (editing of the default values file, column 11, lines 6-15), wherein said three-dimensional aircraft engine harness definition defines a harness (a three dimensional digital computer model, column 3, lines 17-20).

Aldrich et al. fail to expressly disclose said two-dimensional electronic model of said aircraft engine harness is generated by creating a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings, and said two-dimensional electronic model of said aircraft engine harness is generated by producing a second line that extends from said first line to a third one of said plurality of connector fittings. Nevertheless, Aldrich et al. disclose transferring a three dimensional view of the harness model to a two dimensional representation (column 3, lines 17-23) and suggest "The dimension 1622 appears three dimensional even though the isometric view in CADAM is two dimensional" (column 40, lines 38-40).

Hughes et al. disclose a method to convert a three dimensional computer representation of a wire harness into a two dimensional model of the harness (abstract). As shown in Fig. 3, an edited version of an unfolded harness, a first line that extends from a first one of the plurality of connector fittings to a second one of the plurality of connector fittings and a second line that extends from said first line to a third one of said plurality of connector fittings.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Aldrich et al. to incorporate the teachings of Hughes et al. to obtain the invention as specified in claim 12 because, as suggested by Aldrich et al., Hughes et

al. expressly disclose unfolding a three dimensional view of harness into a two dimensional schematic with lines connecting the plurality of connector fittings.

8-13. Regarding claim 13, Aldrich et al. further disclose said processor further programmed to determine parameters including at least one of a branch angle, a base angle, and a true angle (for example, FIG. 19B displays determined angles of wires and connectors).

8-14. Regarding claim 14, Aldrich et al. further disclose said processor further programmed to determine parameters including at least one of a wire length, a fitting keyway, and a master keyway (Dimensioning techniques, column 40, lines 31-36; for example, FIG. 19B displays determined wire length between breakouts or between breakout and connector).

8-15. Regarding claim 15, Aldrich et al. further disclose said processor further programmed to determine design parameters of the harness to display the harness design parameters in a tabular format (for example, FIG. 20 is a wiring table).

8-16. Regarding claim 16, Aldrich et al. further disclose said processor further programmed to define each of the connector fittings (connector, column 16, lines 11-46).

8-17. Regarding claim 17, Aldrich et al. further disclose said processor further programmed to determine a length between harness branches (for example, FIG. 19B displays determined wire length between breakouts).

8-18. Regarding claim 18, Aldrich et al. further disclose said processor further programmed to determine diametrical changes of the harness branches (determined breakout, FIG. 19B, diametrical change occurs when there is a breakout or branch).

Applicants' Arguments

9. Applicants argue the following:

(1) "Applicants submit a supplemental oath or declaration to correct the defect in the oath or declaration" (page 8, paragraph 3, Amendment).

(2) Applicants have amended Claims 1, 6, and 12 to overcome the rejections under 35 U.S.C. § 112 (page 9, paragraphs 1-3, Amendment).

(3) Applicants have amended Claim 1 to overcome the rejection under 35 U.S.C. § 101 (page 9, paragraph 4, Amendment).

(4) "Aldrich et al. does not describe nor suggest generating two-dimensional electronically modeled aircraft engine harnesses from a three-dimensional harness definition that includes a plurality of connector fittings coupled together with a plurality of branches, where generating the two-dimensional electronically modeled aircraft engine harnesses includes producing a second line that extends from the first line to a third one of the plurality of connector fittings" (page 10, paragraph 3, Amendment).

(5) "Aldrich et al. does not describe nor suggest a modeling system configured to generate a second line that extends from the first line to a third one of the plurality of connector fittings to produce the two-dimensional electronic model" (page 11, paragraph 4, Amendment).

(6) "Aldrich et al. does not describe nor suggest a system including a processor programmed to determine harness design parameters from the three-dimensional aircraft engine harness definition, where the two-dimensional electronic model of the aircraft engine harness is generated by producing a second line that extends from the first line to a third one of the plurality of connector fittings" (page 12, paragraph 3, Amendment).

Response to Arguments

10. Applicants' arguments have been fully considered.

10-1. Applicants' argument (1) is persuasive. The objection to Oath/Declaration in Office Action dated November 10, 2004, has been withdrawn.

10-2. Applicants' argument (2) is persuasive. The rejections of claims 1-18 under 35 U.S.C. 112, in Office Action dated November 10, 2004, have been withdrawn.

10-3. Applicants' argument (3) is persuasive. The rejections of claims 1-5 under 35 U.S.C. 101, in Office Action dated November 10, 2004, have been withdrawn.

10-4. Applicants' arguments (4)-(6) are persuasive. The rejections of claims 1-18 under 35 U.S.C. 102(b), in Office Action dated November 10, 2004, have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made, as detailed in sections **8** to **8-18** above.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Reference to Uchiyama et al., U.S. Patent 6,330,746 B1 issued December 18, 2001, and filed June 21, 1999, is cited as disclosing a method of determining the length of electric wires for use in constructing a wire harness.

12. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30. Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Jean R. Homere can be reached on (571) 272-3780. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day H.D.
June 12, 2005

Thai Phan
Patent Examiner
Thai Phan
AU: 2128

Title: Methods and Apparatus for Electronically Modeling Aircraft Engine Harnesses
Inventor(s): Patrick Barrow, et al.
S/N: 09/780,814 Docket No: 13DV-13726
Atty: Robert B. Reeser III; Phone No: (314) 621-5070

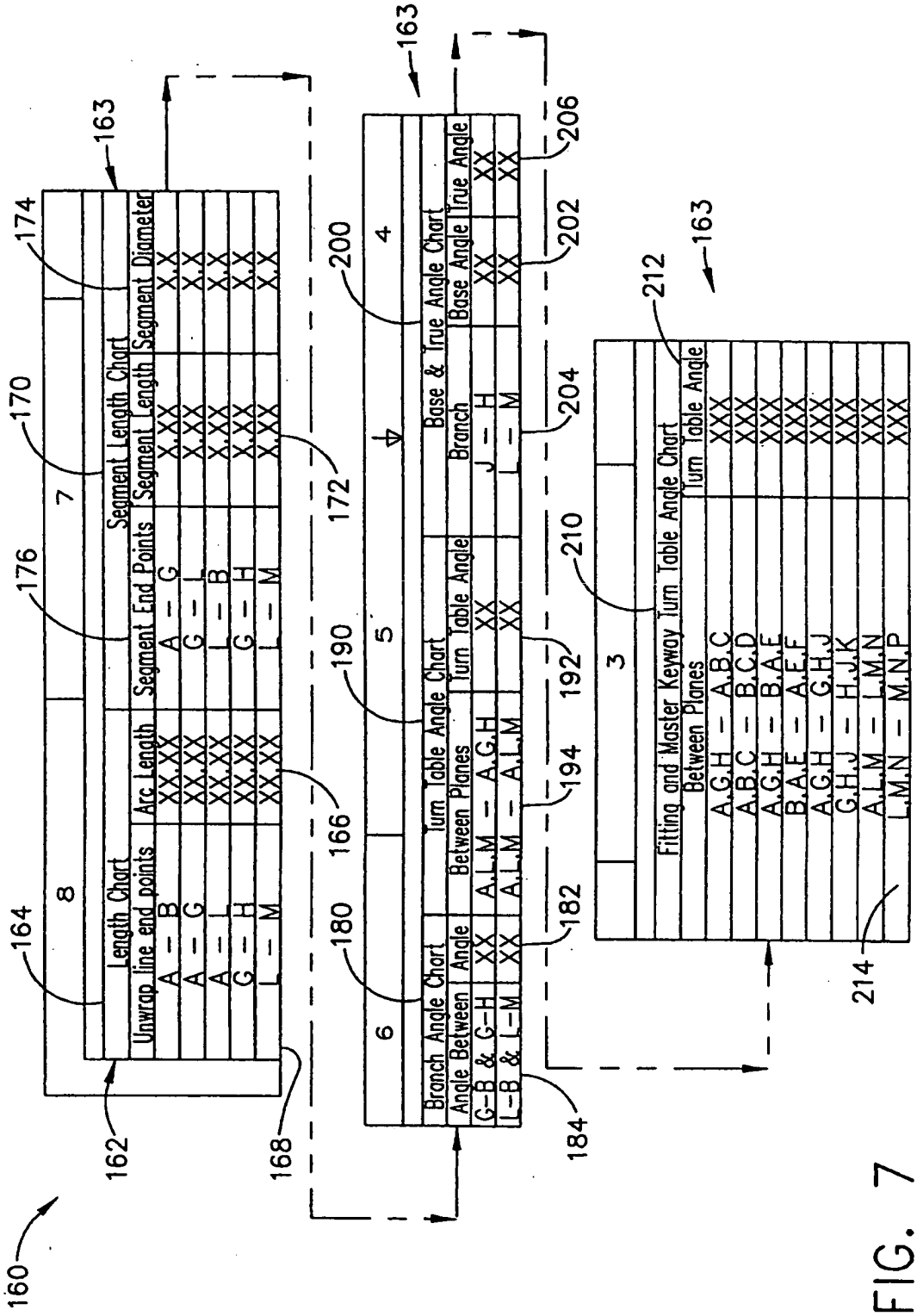

FIG. 7

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H.D. 6/10/05